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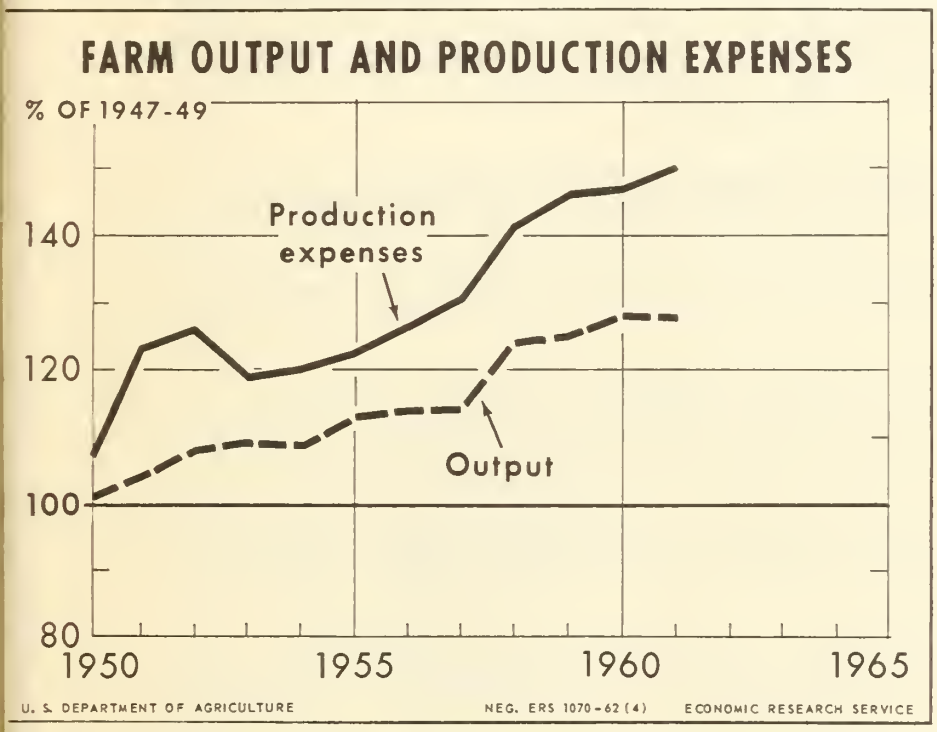
The FARM COST SITUATION



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Farm production expenses have increased more rapidly than farm output, so expense per unit of output has gone up. Both higher prices paid for production inputs, and greater quantities used, contributed to the rise in production expenses. The quantity of purchased inputs has increased at about the same rate as farm output, while the quantity of unpaid inputs used, particularly labor, has gone down.

IN THIS ISSUE

The Effects of Land Retirement on Farm Costs

Farmers and the Cost-Price Squeeze

The Changing Character of Farm Production Costs

Published twice a year by:
ECONOMIC RESEARCH SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Goods and services used in production: Index numbers of cost rates and prices paid by farmers, United States

(1947-49=100)

Period or year	Commodities, interest, taxes, and wage rates	Commodities only	Feed	Livestock	Motor supplies	Motor vehicles	Farm machinery	Farm supplies	Building and fencing materials	Ferti-lizer	Seed	Wage rates
Average:												
1910-14---	39	42	43	29	---	---	42	42	34	70	41	23
1915-19---	59	63	68	44	---	---	54	70	48	101	62	34
1920-24---	65	61	60	33	---	---	65	77	57	101	60	42
1925-29---	65	61	58	44	94	49	64	73	54	92	60	43
1930-34---	50	47	39	25	74	49	61	61	47	75	40	28
1935-39---	49	52	45	36	74	56	64	60	49	71	49	28
1940--------	49	52	43	41	71	56	64	62	49	69	42	30
1941--------	53	55	47	46	74	59	65	66	53	69	40	35
1942--------	60	62	57	54	79	64	69	73	58	76	54	46
1943--------	68	69	68	61	81	67	71	82	60	81	68	61
1944--------	73	73	75	58	82	73	73	86	64	83	77	74
1945--------	77	74	74	63	82	75	74	87	66	84	79	83
1946--------	83	81	87	72	84	77	76	88	72	85	81	90
1947--------	95	95	102	90	92	90	87	95	93	93	93	97
1948--------	104	105	109	111	103	100	100	100	104	102	109	103
1949--------	101	100	89	99	105	110	113	105	103	105	98	100
1950--------	104	104	91	116	106	110	116	105	105	101	94	99
1951--------	115	115	102	141	111	118	125	112	117	106	96	109
1952--------	117	116	108	118	112	123	129	119	118	109	109	117
1953--------	111	108	98	85	114	122	130	116	119	110	99	120
1954--------	111	108	98	87	116	122	131	112	118	110	93	118
1955--------	110	106	91	85	117	123	131	110	120	108	98	120
1956--------	111	105	89	79	119	127	136	111	125	106	86	124
1957--------	114	108	87	89	124	136	143	111	129	107	89	130
1958--------	117	111	86	109	123	142	149	112	130	107	88	134
1959--------	119	112	86	109	124	147	156	111	133	106	84	142
1960--------	120	112	84	103	125	145	160	1/ 111	133	106	87	147
1961--------	121	112	85	103	126	144	163	112	132	108	86	149
July------	121	111	86	94	---	143	---	---	---	---	---	151
Aug.------	121	112	85	99	---	---	---	---	---	---	---	---
Sept.-----	121	112	85	99	126	143	164	112	132	108	89	---
Oct.------	121	112	84	101	---	143	---	---	---	---	---	148
Nov.------	121	112	84	101	---	---	---	---	---	---	---	---
Dec.------	122	113	85	101	125	147	164	114	132	---	---	---
1962:												
Jan.------	123	113	86	102	---	148	---	---	---	---	---	152
Feb.------	123	113	85	104	---	---	---	---	---	---	89	---
Mar.------	123	114	85	107	124	150	165	113	132	---	90	---
Apr.------	124	114	86	110	---	---	---	---	---	107	89	155

1/ Revised.

Statistical Reporting Service.

THE FARM COST SITUATION

Approved by the Outlook and Situation Board, May 8, 1962

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THE HIGHLIGHTS

Farm production expenses reached a record high of $26.9 billion in 1961, about half a billion dollars more than in 1960. Some further rise may be expected in 1962. Increases in recent years have been partly due to higher prices paid, and partly to larger quantities of production inputs purchased (table 1).

However, last year's increase over the 1960 farm production expenses was more than offset by the higher gross farm income. This additional income came about equally from higher Government payments, and from an increase in cash receipts from marketings of farm products. A larger volume of livestock and livestock product marketings, together with a slight improvement in prices received for crops, produced the increase in cash receipts.

Farm wage rates are moderately higher than in 1961, and some further rise is expected. An offsetting factor is the indicated smaller amount of labor hired, so that the total farm wage bill may not be much different from last year.

Prices of farm machinery and equipment have edged up slightly over 1961 levels. Building material prices have been relatively stable over the last few years, and little change is in prospect in the forseeable future. Fertilizer prices are about the same as last year, although the per-unit cost of plant nutrients is less, owing to more general use of the more economical higher-analysis fertilizers. Sales of pesticides have been increasing steadily in the past decade, but 1962 prices generally average about the same as last year.

Supplies of feed grains, high protein feeds, and other concentrates in the 1962-63 feeding season may be about 5 percent smaller, in relation to

Table 1. - Gross farm income, production expenses, net farm income, and related indexes, 1950 to 1961 1/

Item	1950-54 average	1955-59 average	1960	1961 2/
	Bil. dol.	Bil. dol.	Bil. dol.	Bil. dol.
Cash receipts from farm marketings	31.0	31.4	34.0	34.8
Nonmoney income and Government payments	4.2	4.2	4.1	4.8
Realized gross farm income	35.2	35.6	38.1	39.6
Farm production expenses	-21.4	-23.9	-26.4	-26.9
Farmers' realized net income	13.8	11.7	11.7	12.7
Net change in farm inventories	.5	.3	.3	.3
Farmers' total net income	14.3	12.0	12.0	13.0
	Index numbers (1947-49 = 100)			
Volume of farm marketings:				
Livestock and livestock products	110	127	134	139
Crops	101	113	130	129
All farm products	106	121	133	135
Volume of purchased inputs	109	116	122	122
Productivity, or output per unit of total input	103	117	125	127
Prices received by farmers:				
Livestock and livestock products	99	85	87	86
Crops	101	92	89	91
All farm products	100	88	88	89
Prices paid by farmers for commodities used in production, interest, taxes and wage rates	112	114	120	121
Ratio of prices received to prices paid for production items (including interest, taxes and wage rates) 3/	89	77	73	74

1/ 48-State data.

2/ Preliminary.

3/ Not to be confused with the Parity Ratio

numbers of grain-consuming livestock, than in 1961-62. Prices of feed grains and high-protein feeds have risen about 3 percent since November.

Continuing increases in farm borrowings, with relatively stable interest-rates, are expected to push up total interest costs in 1962 about 6 percent higher than the 1961 total. Taxes payable in 1962 are also expected to be about 6 percent higher than last year. Market prices of farm real estate renewed their upward trend, and on March 1, 1962, averaged 5 percent higher than a year earlier.

Data from the Department's Farm Costs and Returns series show the effect of these changes in farm costs on different types of farms. Most of these types of farms are faced with less favorable price-cost relationships than in the late 1940's, but the impact on farm incomes has been partly offset by increased productivity. Price-cost conditions on most of these farm types have not changed greatly since the late 1950's: the ratio of prices received to prices paid in 1961 was within 5 percent of the 1957-59 average on 28 of the 38 types of farms for which data are available.

FARM LABOR

Thus far in 1962 farm wage rates have averaged moderately higher than a year ago. This upward trend is expected to continue during the next year. However, the total farm wage bill this year may not be greatly different from 1961, because the anticipated drop in the use of hired farmworkers will offset the higher wage rates.

On April 1 of this year, farm wage rates averaged 2.9 percent higher than those paid 12 months before (table 2). The increase in this period varied from 1.4 percent in the Mountain region to 5.3 percent in the Southern Plains.

In 1961, the hourly equivalent of all types of farm wage rates averaged 83.4 cents per hour in the country as a whole. This was 2 percent higher than 1960 rates, the smallest annual increase since 1954. On an annual basis, the increase this year is expected to exceed last year's rise.

Industrial wages also continue to increase. Last year, earnings of production workers in manufacturing averaged $2.32 per hour compared with $2.26 in 1960. During the first quarter of 1962 these nonfarm workers earned $2.38 per hour.

Further advances in mechanization of farmwork and a reduction in the total acreage of crops suggests the need for less farmwork this year. Of the crops that require large numbers of seasonal workers, March 1 planting intentions indicate more acres of tobacco and sugar beets, but these increases will be offset by reductions in others, such as cotton and potatoes.

Table 2. - Average farm wage rates, by geographic regions, April 1, 1962, and percentage change from 1961

Region	Average wage rates, April 1, 1962 1/				Percentage change 1961 to 1962 2/
	With board and room, per month	Without board or room		Composite, per hour	
		Per day	Per hour		
	Dollars	Dollars	Dollars	Dollars	Percent
New England----------	160	10.00	1.22	1.01	4.2
Middle Atlantic------	146	9.00	1.12	.80	1.8
East North Central---	148	9.00	1.11	.74	2.9
West North Central---	153	9.30	1.11	.80	2.4
South Atlantic-------	3/	5.90	.78	.60	1.5
East South Central---	3/	4.90	.66	.48	4.8
West South Central---	3/	6.60	.79	.67	5.3
Mountain----------	176	9.20	1.06	.88	1.4
Pacific----------	229	3/	1.26	1.24	1.6
48 States------	150	6.70	1.07	.78	2.9

1/ Selected from 9 types of rates for which averages are reported. Composite is hourly equivalent of all types of rates.
2/ Based on composite rates per hour.
3/ Relatively unimportant in this region.

From the monthly report, Farm Labor, prepared by the Statistical Reporting Service, U. S. Department of Agriculture.

Numbers of workers are expected to be sufficient for the indicated smaller amount of farmwork. In some parts of the country, however, the supply of experienced year-round workers, such as dairy hands, remains tight. But the number of unemployed, classified as hired farmworkers, remains moderately high, despite some improvement in recent months. In 1961 an average of 9.3 percent of the persons included in the farm labor force was unemployed.

Of the total U. S. labor force, unemployed workers averaged 6.7 percent last year. In line with the recent improvement in economic activity, however, the overall unemployment rate has gone down. It was 5.8 percent in January 1962 and 5.5 in March.

Last year was the second consecutive year in which the number of foreign workers contracted or admitted for seasonal farm work was lower than in the previous year. The 310 thousand contracted last year represented a reduction of 7 percent from 1960, according to the U. S. Department of Labor. More than 90 percent of these nationals were from Mexico; others were from the British West Indies and Canada. Foreign workers will be available this year, but certification of needs will be based on tightened regulations. Part of the tightening results from application of new amendments included in last year's law extending the Mexican farm labor program, and part of it from stricter interpretation of a provision of the original statute regarding the adverse affect of foreign workers on domestic workers' wage and working conditions.

NONFARM INPUTS

Farm Power and Machinery

Farm machinery prices will be slightly higher in 1962 than in 1961. Price increases of 2 to 3 percent on major pieces of farm equipment have been announced by some farm machinery companies in the past few months. Wholesale prices of farm tractors, machinery and equipment increased about 2 percent in 1960 and again in 1961, but these were the smallest increases since the 1954-55 period (table 3).

Farmers paid 2.5 percent more for diesel fuel in 1961 compared with the previous year. Prices paid for motor supplies were up less than 1 percent. Gasoline prices were unchanged.

Prices of new motor vehicles continued to edge downward in 1961, reflecting the increasing sales of the lower-priced compact cars. However, by March of this year, higher tractor prices had lifted prices of new motor vehicles as a group back to 1959 levels.

Prices farmers paid for automobile tires in 1961 were about 4 percent below 1960 and 25 percent less than in 1951. Truck and tractor tires have shown somewhat smaller declines. Tire prices (without tax) continued their downward trend started in the 1951-52 period. Taxes paid per pound of tire doubled from 5 cents in 1951 to 10 cents as of July 1, 1961.

Table 3.--Power and machinery: Prices paid, expenditures for repair and operation of motor vehicles, and value of manufacturers' shipments of farm machinery and equipment, United States, 1940-61

Year	Index of prices paid by farmers, 1947-49= 100						Farmers' expenditures for repair and operation of motor vehicles 6/	Index, 1947-49=100	
	New farm machinery	New motor vehicles 1/	Gasoline 2/	Diesel fuel 3/	Tires 4/	All motor supplies 5/		Domestic shipments of farm machinery 7/	Wholesale prices of tractors, farm machinery, and equipment 8/
							Mil. dol.		
1940----	64	56	74	60	73	71	229	---	68.9
1945----	74	75	81	65	104	82	497	60	72.9
1946----	76	77	83	69	105	84	536	69	78.1
1947----	86	90	92	86	101	92	635	89	90.3
1948----	101	100	103	108	101	103	729	107	101.4
1949----	113	110	105	106	98	105	746	104	108.3
1950----	115	110	106	109	110	106	767	104	110.7
1951----	124	118	107	113	131	111	914	118	120.1
1952----	129	123	109	116	126	112	998	101	121.6
1953----	130	122	111	115	122	114	988	93	122.3
1954----	131	122	113	119	122	116	941	77	122.2
1955----	131	123	114	118	120	117	993	85	123.2
1956----	135	127	117	121	119	119	1,161	71	127.6
1957----	142	136	123	124	116	124	1,265	73	133.5
1958----	148	142	121	120	112	123	1,296	83	139.0
1959----	156	145	123	122	106	124	1,369	86	143.4
1960----	160	144	126	119	103	125	1,352	58	146.1
1961----	163	142	126	122	98	126	---	60	148.9
1962 -9/	165	145	123	122	99	124	---	---	151.7

1/ Includes tractors, automobiles, and motortrucks. 2/ Gasoline, average tank truck price 1947-49, $0.219 per gal. 3/ Diesel fuel, average price 1947-49, $0.136 per gal. 4/ Tires, average price 1947-49, size 6.70 x 15, $18.80 each. 5/ Includes fuel, oil, grease, tires, tubes, batteries, and spark plugs. 6/ Operating costs exclusive of gasoline and oil (for automobiles, 50 percent of costs in period 1942-45, 40 percent thereafter). 7/ Based on data published in Current Industrial Reports, U. S. Bureau of the Census, valued at 1947-49 prices. Includes tractors, farm machinery, and equipment; excludes garden tractors, motortrucks, automobiles, and attachments and parts of tractors. 8/ Bureau of Labor Statistics, U. S. Dept. of Labor. 9/ March.

There are a number of diverse factors affecting the demand for farm machinery. While payments under the Feed Grain Program augment farmers' income, the diverted acreage (about 15.1 million acres of wheat and nearly 32.7 million acres of feed grains) reduces the overall work and machine load. With the general improvement in farm incomes, however, it appears that the 1962 demand for farm machinery may be slightly stronger than last year.

Domestic shipments (valued at 1947-49 prices) of farm machinery increased 3 percent from 1960 to 1961 (table 3). Domestic shipments of wheel-tractors in 1961 totaled over 153 thousand, or nearly 12 percent higher than in 1960. When inventory changes are considered, however, it seems clear that about 10 percent fewer wheel-tractors moved to farms in 1961.

Shipments of some major farm machines, such as combines, forage harvesters, and pick-up balers, declined this year (table 4).

The tractor horsepower race continues. Production in 1961 of wheel-tractors with 60 or more belt horsepower showed an increase of more than 60 percent over 1959, despite a drop of one-third in total tractor production in that period, so the proportion of these large tractors has jumped from less than 15 percent of the total production to nearly 35 percent.

The increase in the average size of the tractors manufactured has been accompanied by a pronounced shift toward diesel units, especially in the past decade. This shift is partly due to reductions in price differentials between diesel and gasoline-powered machines. Diesel units accounted for about half the total wheel-tractor production in 1961, compared to only about 15 percent in 1957 (table 5). The diesel trend is well advanced with larger tractors, but in the past few years there also has been a very noticeable shift toward diesel power in the medium horsepower machines.

Table 4 - Manufacturers' shipments and index of inventories of selected machines, 1960 and 1961 1/

Item	Units shipped		Percentage change	Inventory-Dec. 31 1954=100		Percentage change
	1960	1961		1960	1961	
	Number	Number	Percent			Percent
Combines	29,814	24,281	-19	70	43	-27
Cornpickers	25,554	30,659	+19	75	45	-30
Forage harvestors	24,554	22,049	-10	133	125	- 8
Pickup balers	48,973	45,567	- 7	95	94	- 1

1/ Indexes based on reports from manufacturers who together account for 60 to 95 percent of the production of these machines. Inventories include manufacturer and dealer owned equipment.

Table 5. -Wheel tractor production: percentage that were diesel, and distribution of production, by horsepower class, 1957-61

Year	Tractors produced	Diesel tractors of -			All tractors of -	
		9-49 HP	50 and up	All HP	9-49 HP	50 HP and up
	Number	Percent of HP class	Percent of HP class	Percent	Percent	Percent
1957	229,000	4.9	44.4	16.4	71.2	28.8
1958	241,000	11.5	42.1	23.1	62.0	38.0
1959	259,000	18.4	46.6	30.5	57.1	42.9
1960	152,000	25.8	58.3	40.8	53.8	46.2
1961	176,000	NA	NA	47.5	48.2	51.8

Building and Fencing Materials

The prices of building and fencing materials as a group in early 1962 have been essentially the same as for the past 4 years. The index of prices paid in March of this year was 132, with 1947-49=100. Several individual items in the index have changed slightly in the past year, some of them increasing and others decreasing. Thus any farmer who is considering the construction or remodeling of farm buildings is faced with fairly stable prices of materials, at least in the short run.

Even if prices were more erratic, it is likely that other elements in the picture would be of more concern to him. Farmers now have a wide selection of building materials and designs, some of which offer significant opportunities to save labor: for example, milking parlors - particularly the herringbone type - and various improved structures and related equipment for handling hogs, beef cattle, and poultry.

Some of these new developments make the old structures and equipment obsolete. Yet the old oftentimes continues in use. Many farmers find it necessary to balance the costs of the new facilities against the returns that would result from remodeling old structures.

Certain farm-building problems also arise out of the consolidation of farms. Since 1950, the number of farms in the United States has shrunk from 5.6 million to 3.7 million, due in large part to consolidation of farms. As a result, many farm operators have found themselves with an additional set of buildings not always adapted to the expanded needs of the new farm unit. Real problems arise on how best to use such buildings, and whether and how to remodel and maintain them. Structurally sound service buildings may be so poorly

adapted to present needs that they should be abandoned. Others may be used to advantage, perhaps after certain modifications. In any case, the decision of what to do with them should be based on a balancing of estimated costs and returns from the various alternatives, giving careful consideration to labor efficiency.

Fertilizer

Prices paid by farmers for commercial fertilizers this spring are slightly lower than in the fall of 1961, but about the same as a year ago. The index of prices paid in April 1962 was 107, with 1947-49=100. These index numbers reflect changes in prices of specific kinds of fertilizers most commonly used. However, farmers have shifted more and more to the use of higher analysis fertilizers, which cost more per ton, but less per unit of plant food. Thus the actual cost, on a per-unit-of-nutrient basis, had risen less than indicated by the index of prices paid.

Supplies of fertilizers in 1961-62 are estimated to total 8.8 million tons of plant nutrients - 3.3 million tons of nitrogen (N), 2.9 million tons of phosphate (P_2O_5), and 2.6 million tons of potash (K_2O). This 8.8 million tons is twice the quantity available in 1949-50, and 12 percent above 1960-61. Nitrogen supplies are up 6 percent over 1960-61, phosphate 8 percent, and potash 26 percent. Part of the increase over a year ago may go to recover the normal stock position in trade channels, particularly of potash. Farm use of nitrogen was up 11 percent for the year ended June 30, 1961, over the previous year, but there was little change in phosphate or potash use.

Pesticides

Manufacturers' prices of most pesticidal chemicals average much the same as in 1961, although prices of a few items changed sharply. The published quotation for cube (rotenone) powder was reduced from 21 cents a pound to 18 cents, and that for lead arsentate from 30.5 to 26 cents. The price of DDT, lowered to 17 cents only 3 months previously, was raised again to 21 cents a pound. Methyl parathion quotations rose from 84 to 88 cents a pound.

In 1961, total sales of pesticidal chemicals by the manufacturer reached the all-time high of $300 million. This is nearly double the sales in 1953. Insecticidal sales were up about 7 percent, the first major increase in this category of pesticides in two years, owing to heavier-than-usual insect infestations in some farm areas. Herbicides continued their upward consumption trend in 1961. About 60 percent of pesticides output goes into domestic agriculture; the remainder is about equally divided between nonagricultural uses and exports.

Basic manufacturers' inventories of some materials, such as benzene hexachloride and arsenicals, were about the same at the end of the 1961 season as a year previously. Those of others were up somewhat -- DDT about 40 percent, methyl parathion 90 percent, copper sulfate 67 per-

cent, organic weed killers as a group 20-30 percent. Stocks of some others, such as ground sulfur and nonphosphorus miticides, were down slightly.

FARM-PRODUCED INPUTS

Feed

Feed grain prices have been comparatively stable during the November 1961-March 1962 period, rising only 3 percent. During these months, prices averaged 6 percent higher than during the same period a year earlier. Prices received by farmers for corn on April 15, 1962 at $0.988 per bushel, were 5 cents higher than last November and about 2 cents higher than April 15, 1961 (table 6). Sales of corn under the domestic payment-in-kind program, and late harvesting of the 1961 crop have contributed to the flattening of corn-prices this winter. This spring and summer, corn prices will continue to be influenced by the rate of disposition of corn remaining to be sold against CCC certificates, as well as by prospects for the 1962 crop.

The April 15 price received by farmers for sorghum grain averaged $1.68 per cwt., 20 cents higher than a year ago, but 25 cents below the 1961 support level. Oat prices April 15, at $0.66 per bushel, were 14 percent higher than a year ago. Barley prices, at $1.01 per bushel, were 19 percent higher than a year ago. In mid-April, oat prices averaged about 18 percent above corn, and barley prices about 33 percent above corn, after adjustments for their different feeding values.

The feed grain acreage of last year, and that indicated for this year, reflect the influence of the Feed Grain Program. Farmers have signed up to divert a total of 32.7 million acres of cropland to soil-conserving uses in 1962. The sign-up includes 22.9 million acres of corn, compared with 19.9 million acres in 1961; 6.7 million acres of sorghum grains, compared with 6.6 million acres last year; and 3.1 million acres of barley. The provisions of the program are similar to those of 1961, except for the inclusion of barley, this year.

With another favorable growing season, 1962 feed grain production may be around the 1961 output of 141 million tons. With the smaller carryover of feed grains into the 1962-63 feeding season, the total supply of feed grains, high-protein feeds, and all other concentrates would be a little below the 256 million tons for 1961-62. Grain-consuming animal units are expected to increase to about 172 million. With the smaller feed supply, the concentrate supply per animal unit available for 1962-63 would be around 5 percent less than in 1961-62.

Domestic disappearance of the 5 major oilseed meals totaled 5.8 million tons during October-February, 4 percent above the same period a year earlier. Production of 6.3 million tons was up 2 percent. Most of the increased production was soybean meal. Prices of high protein feeds have been comparatively stable during the first half of the feeding year, rising only 3 percent from November to March. While prices of these feeds last fall were about 15 percent higher than a year earlier, by April cottonseed meal was

Table 6.- Average prices of feed in the United States, April 15, 1960-62

Item	Unit	1960	1961	1962	Percentage change 1961 to 1962
		Dollars	Dollars	Dollars	Percent
Prices received by farmers:					
Corn	Bushel	1.05	0.965	0.988	2
Oats	do.	.68	.581	.664	14
Barley	do.	.84	.85	1.01	19
Sorghum grain	Cwt.	1.55	1.48	1.68	14
Hay, baled	Ton	22.50	20.00	21.40	7
Prices paid by farmers:					
Mixed dairy feed, 16 percent protein	Cwt.	3.68	3.66	3.66	0
Laying mash	do.	4.38	4.37	4.35	0
Broiler mash	do.	4.69	4.66	4.67	0
Cottonseed meal	do.	4.08	4.01	4.28	7
Soybean meal	do.	4.16	4.63	4.39	-5
Bran	do.	3.05	2.95	3.01	2
Middlings	do.	3.08	2.99	3.05	2
Alfalfa hay, baled	Ton	33.10	31.50	31.30	-1
Average value of concentrate ration fed to - 1/					
Poultry	Cwt.	3.40	3.34	3.41	2
Milk cows in milk-selling areas	do.	2.96	2.91	2.93	1
Milk cows in cream-selling areas	do.	2.44	2.37	2.46	4

1/ Value of corn, oats, oilmeal, millfeed, commercial mixed feed, and other feeds, which make up 100 lbs. of "grain" ration.

7 percent higher and soybean meal 5 percent lower than a year before. Prospects are for a continued generally good demand for these high protein feeds during the next several months, with prices probably averaging a little lower than in 1961.

Bran and middlings were about 2 percent higher than a year earlier. Mixed dairy feed, laying mash, and broiler mash were about the same as a year earlier.

Estimated gross returns per dollar of feed cost, with comparisons, are given in table 7. With the exception of broilers and sheep raising, gross return per dollar of feed cost has declined from 1 percent for turkeys to 15 percent for butterfat, compared with a year ago. Broilers show a 2-percent increase. Gross returns from sheep raising are the same as a year ago.

Seed

Retail prices of field seeds in mid-April averaged 3 percent higher than a year earlier. This price increase was associated with a 6 percent decrease in initial supplies (1961 production plus July 1, 1961 carryover) of 26 kinds of seeds. Prices paid for sweetclover, certified and common alfalfa, red clover, and Kobe striate lespedeza were substantially higher, while prices of 10 other important kinds of seed were slightly higher than a year earlier. Prices of certified seed potatoes dropped about 20 percent from last spring. Moderate decreases (7-14 percent) were recorded for soybeans, tall fescue, Sericea and Korean lespedeza, and white clover, while prices of 9 other seed items were down only slightly.

The 1961 production plus July 1 carryover of alfalfa and red clover seeds was down from a year earlier by about 13 and 16 percent, respectively. Mid-April retail prices of these two kinds of seed increased from a year earlier by about 27 and 25 percent, respectively. Higher prices were also reported for other hay and pasture seeds, including timothy, orchardgrass, and crested wheatgrass. However, an adequate supply is available for spring seeding.

Sweetclover prices were 53 percent higher in mid-April than a year earlier, rising to $22.60 from $14.80 per 100 pounds in response to a 43 percent reduction in the 1961 production plus carryover. The short domestic supply has been bolstered by imports from Canada, which have totaled about 14.5 million pounds over the period July 1961 through March 1962.

Prices paid for seed potatoes in mid-April averaged $2.40 per hundredweight, or 20 percent below a year earlier. The estimated 1961 production of certified seed potatoes was 18 percent greater than 1960 production. An 11 percent decline was reported in prices for soybean seed, whereas seed wheat prices were 12 percent higher than mid-April 1961. Prices paid for other grain seeds varied 10 percent or less from prices paid during the previous spring.

Table 7. - Gross returns from livestock enterprises per $1.00 of feed cost, United States, based on April 15 prices, 1947-56 average and 1960-62 1/

Livestock enterprise or product	Gross return per $1.00 of feed cost				Percentage change 1961 to 1962
	Average, 1947-56	1960	1961	1962	
	Dollars	Dollars	Dollars	Dollars	Percent
Eggs	1.44	1.53	1.43	1.32	- 8
Broilers	1.57	1.33	1.23	1.26	2
Turkeys	1.75	1.70	1.39	1.37	- 1
Milk	1.72	1.83	2.02	1.87	- 7
Butterfat	1.36	1.32	1.51	1.28	-15
Hogs	1.59	1.78	2.06	1.86	-10
Sheep raising	1.53	1.36	1.28	1.28	0
Beef raising	1.81	2.20	2.30	2.25	- 2
	Index numbers (1947-56 =100)				
Eggs	100	106	99	92	---
Broilers	100	85	78	80	---
Turkeys	100	97	79	78	---
Milk	100	106	117	109	---
Butterfat	100	97	111	94	---
Hogs	100	112	130	117	---
Sheep raising	100	89	84	84	---
Beef raising	100	122	127	124	---

1/ The following quantities of feed were used to calculate the cost of feed:

Eggs (per dozen)----------7 lbs. poultry ration
Broilers (per lb.)--------2.5 lbs. broiler mash
Turkeys (per lb.)---------4.5 lbs. poultry ration
Milk (per cwt.)----------31 lbs. concentrates and 110 lbs. hay
Butterfat (per lb.)-------7.75 lbs. concentrates and 27 lbs. hay
Hogs (per cwt.)----------7.5 bu. corn and 20 lbs. soybean meal
Sheep and lambs (per cwt.)-2 bu. corn and 1,500 lbs. hay
Beef raising (per cwt.)---3 bu. corn and 600 lbs. hay

To estimate costs of all harvested forages and pasture in the above quantities of feed, feeds from these sources were converted into hay equivalent and the price received by farmers for "all hay" was applied. Feed nutrients from pasture were assumed to cost one-fourth as much as the nutrients in hay. About one-third of the feed consumed by sheep is used in the production of wool. During the period 1947-62, quantities of broiler mash used to calculate broiler feed costs were: 1947-49, 4 pounds; 1950-52, 3 1/2 pounds; 1953-54, 3 1/4 pounds; 1955-56, 3 pounds; 1957-60, 2.8 pounds; 1961, 2.6 pounds; 1962, 2.5 pounds. During the period 1947-62, the quantities of poultry ration used to calculate turkey feed costs were: 1937-49, 5.5 pounds; 1950-61, 4.75 pounds; 1962, 4.5 pounds. Basic data on amounts of feed fed are from Consumption of Feed by Livestock, 1909-56, U. S. Dept. Agr. Prod. Res. Rpt. 21, 128 pp., illus. 1958, with later unpublished data.

Livestock

Prices of stocker and feeder cattle rose somewhat less rapidly in the last half of 1961 than did prices of slaughter steers (fig. 1). However, the feeding margin has narrowed somewhat in the early months of 1962, and in April, Choice grade slaughter steers at Chicago averaged only $2.34 higher than stocker and feeder cattle at Kansas City. While prices of fed cattle appear likely to hold up better in the first half of this year than they did in 1961, they are expected to fall below last year's levels after mid-year. This could erase the price differential and narrow feeding profits on cattle bought this spring.

Prices of feeder lambs have been rising seasonally since the first of the year, but are still somewhat below the levels of the past 5 years. They had been drifting downward since 1958 until early in 1961, but averaged about the same on April 15, 1962, as they did 12 months before (table 8).

Prices of feeder pigs have fluctuated within the $17 to $19 range for about the past two years, but on April 15 of this year were about 8 percent below the same date last year.

Prices of turkey poults and broiler chicks have been rising seasonally in recent months, but both are below their levels of a year ago.

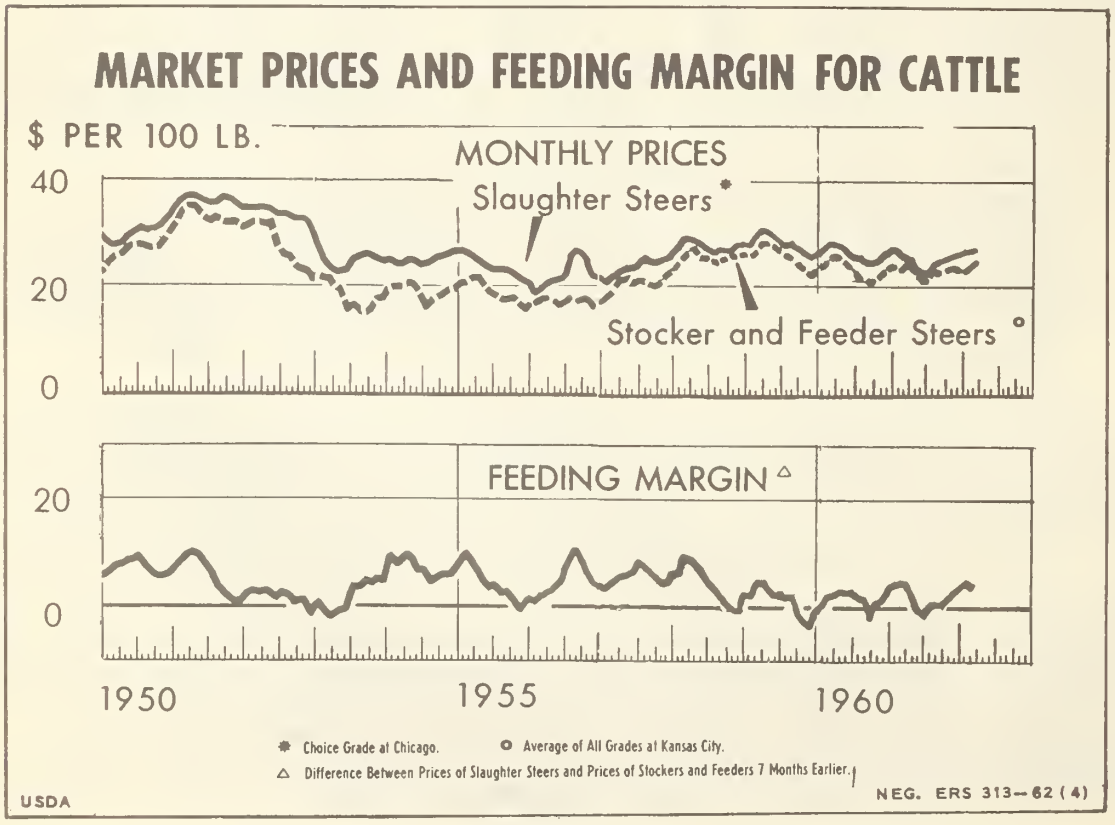

Figure 1

Table 8. - Prices paid by farmers for replacement livestock, 1961 and 1962

Class	Apr. 15, 1961	Oct. 15, 1961	Dec. 15, 1961	Apr. 15, 1962
	Dollars	Dollars	Dollars	Dollars
Feeders and stockers:				
Cattle and calves per cwt.	23.70	23.40	23.50	24.80
Lambs per cwt.	16.20	14.80	14.90	16.10
Hogs per cwt.	18.20	17.50	17.30	16.80
Baby chicks, per 100	18.10	11.30	11.40	15.10
Turkey poults, each	.626	.554	.545	.611
Index, 1947-49=100	109	101	101	110

Source: Agricultural Prices, Statistical Reporting Service, USDA

OVERHEAD COSTS

Interest

Interest rates charged on farm loans have changed little during the last year, and probably will continue around present levels through the remainder of 1962. Rates in the central money markets have been generally stable since mid-1960, except for some increase in short-term rates in 1961.

Farmers (and landlords) paid an estimated $1,390 million in interest charges on their farm debts during calender year 1961: $680 million on their loans secured by farm mortgages and $710 million on their other loans. Total interest payments were about 5 percent of all farm production expenses. Interest payments in 1961 were 50 percent higher than 5 years earlier, and double those of 10 years before, reflecting some increase in interest rates but chiefly the expansion in farm debt. With rates changing little, but with borrowings continuing to increase, interest costs may be about 6 percent higher in 1962 than in 1961.

During the fourth quarter of 1961 interest rates on farm-mortgage loan commitments of the life insurance companies averaged 5.81 percent compared with 6.05 percent in the fourth quarter of 1960. During 1961, 10 of the 12 Federal land banks reduced their rates to $5\frac{1}{2}$ percent from 6 percent, and one reduced its rate to 5-3/4 percent from 6 percent. Rates charged by the Farmers Home Administration continued at 5 percent for farm ownership loans, and 4 percent for housing loans.

Total interest charges on farm-mortgage indebtedness will total about 6 percent more than the amount paid in 1961. This increase reflects an estimated increase of $1 billion in the amount of debt outstanding, and a slight increase in the average interest rate paid. The average interest rate will undoubtedly continue to increase in the future, because the new loans being

added to the aggregate mortgage debt carry higher interest rates than the old loans being paid off or renewed.

Interest rates charged on production credit association loans reached a peak about April of 1960, declined considerably during the rest of the year, and have since declined slightly further. On April 1, 1961, 79 percent of the associations were charging between 6.0 and 6.9 percent and 15 percent were charging 7 percent or more; by April 1, 1962, 84 percent were charging 6.0-6.9 percent, and only 6 percent were charging 7 percent or more.

The available information on rates charged by commercial banks on their farm loans indicates little change since early 1961. Farmers Home Administration production loans continued at the statutory rate of 5 percent.

Taxes

Taxes levied on farm real estate in 1960 increased 6 percent over 1959. Advance reports on 1961 levies (much of which is payable in 1962) indicate another increase of about 6 percent to $1,361 million. This would bring taxes per acre of farmland to $1.27 compared to $1.20 in 1960, and an average of $0.62 in 1947-49. Taxes on farm personal property also have been rising steadily. In 1961, levies on personal property are estimated at $277 million.

Farm real estate taxes have risen faster since 1947-49 than almost any other component of the parity index (fig. 2). The rise in farm property

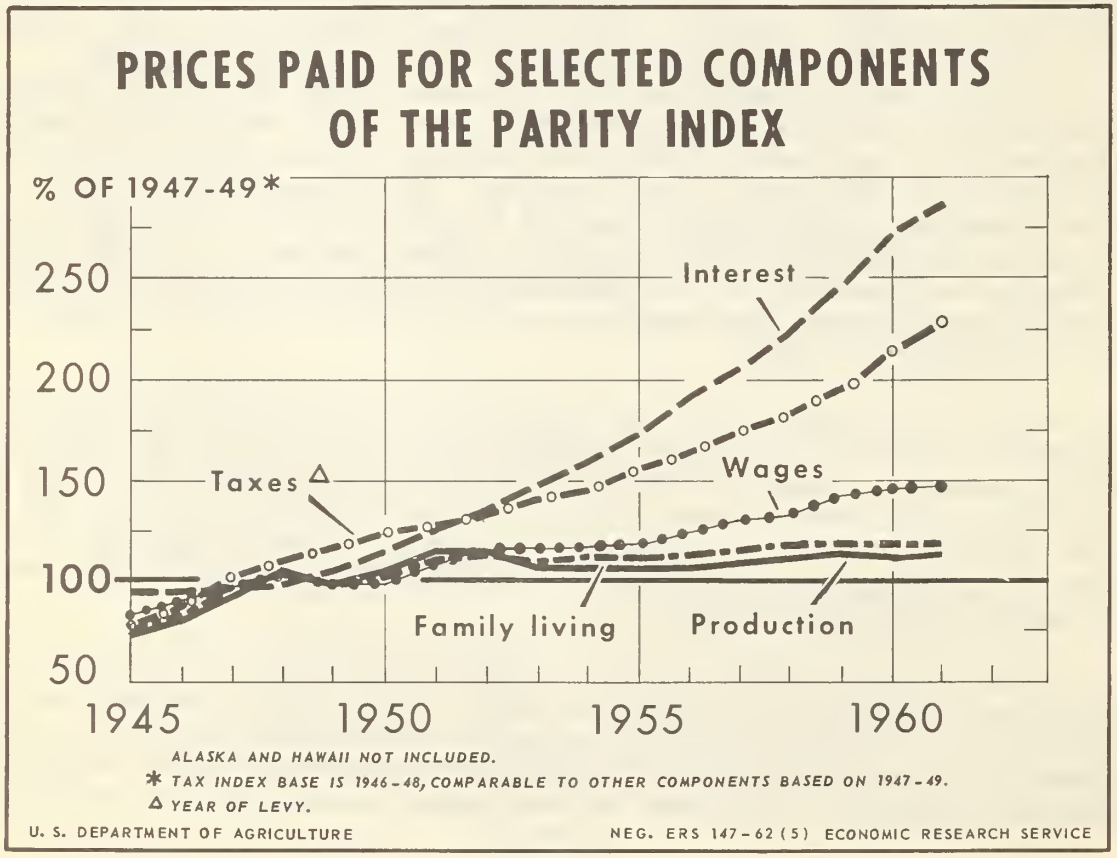

Figure 2

taxes is directly related to the growing demands for State and local governmental services. Projections of State and local governmental revenue requirements in the coming decade indicate that taxes on farm property probably will continue to rise in the future.

FARM REAL ESTATE

The renewed upward trend in market prices of farm real estate that was evident last fall continued at a somewhat faster rate in the 4 months ending March 1, 1962. The national index of average value per acre advanced to 183 (1947-49=100), 2 percent higher than last November and 5 percent above March 1, 1962.

Carryover effects of the higher level of 1961 farm income into early 1962 probably provided the immediate stimulus to the renewed rise in land values. However, longer-term factors, such as the continuation of inflationary pressures and the upturn in the general economy also provided underlying support to the land market. Farmer demand for land for farm enlargement continues unabated, and competes for the limited supply of land on the market (fig. 3). Investor interest in farmland for agricultural purposes appears to have slackened as rates of return on the present market values of farmland become less favorable relative to alternative investments. However, there is considerable speculative interest in farmland that is near expanding metroplitan areas, and thus holds promise for various nonagricultural uses.

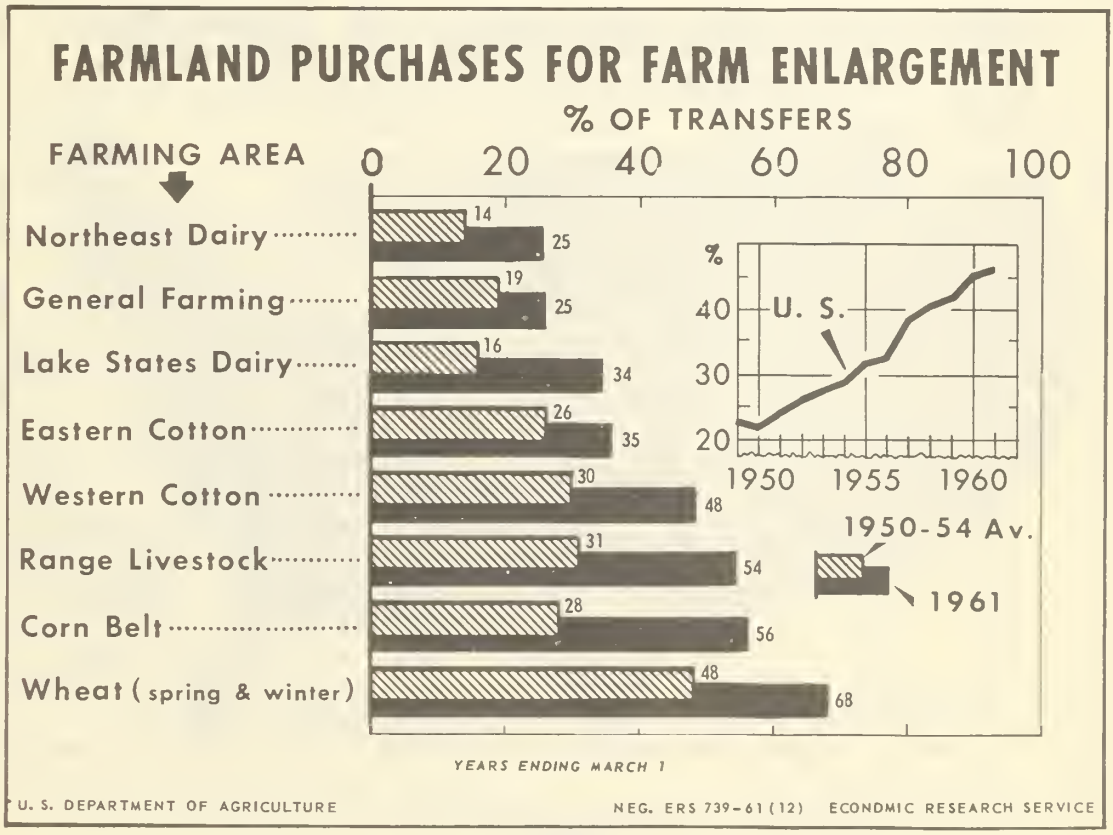

Figure 3

The regional pattern in the upturn in farmland values in the past year bears little relationship to changes in farm income. Values in the central Corn Belt States showed only nominal increases in the latest 4-months period, and had the smallest gains in the past year (fig. 4). However, these changes, although small, have about offset the declines that occurred in most of these States in 1959. The bulk of the increase shown by the national index has been contributed by the States in the Southeast, Southern Plains, and central Mountain Regions. The increases in many of these States have been relatively steady since 1953-54. Florida, Georgia, Mississippi and Louisiana have led the nation in the total increase since 1947-49; values have more than doubled in these States.

Cash rents:

Cash rental rates for the 1962 season continued to keep pace with the rise in market values of farmlands. Cash rents for farms in the Corn Belt, Lake States, and Northern Plains have ranged between 5.5 and 9.1 percent of the market value in recent years (table 9). Net returns to land owners, after real estate taxes and farm upkeep, probably averaged 4.0 to 6.0 percent of current market values.

Rental rates for pasture land for the 1962 season are slightly higher than last year in most States. The cash rental rate for pasture land is usually about half that prevailing for whole farms, and a slightly smaller percentage of the market value of the land (table 10). As both real estate

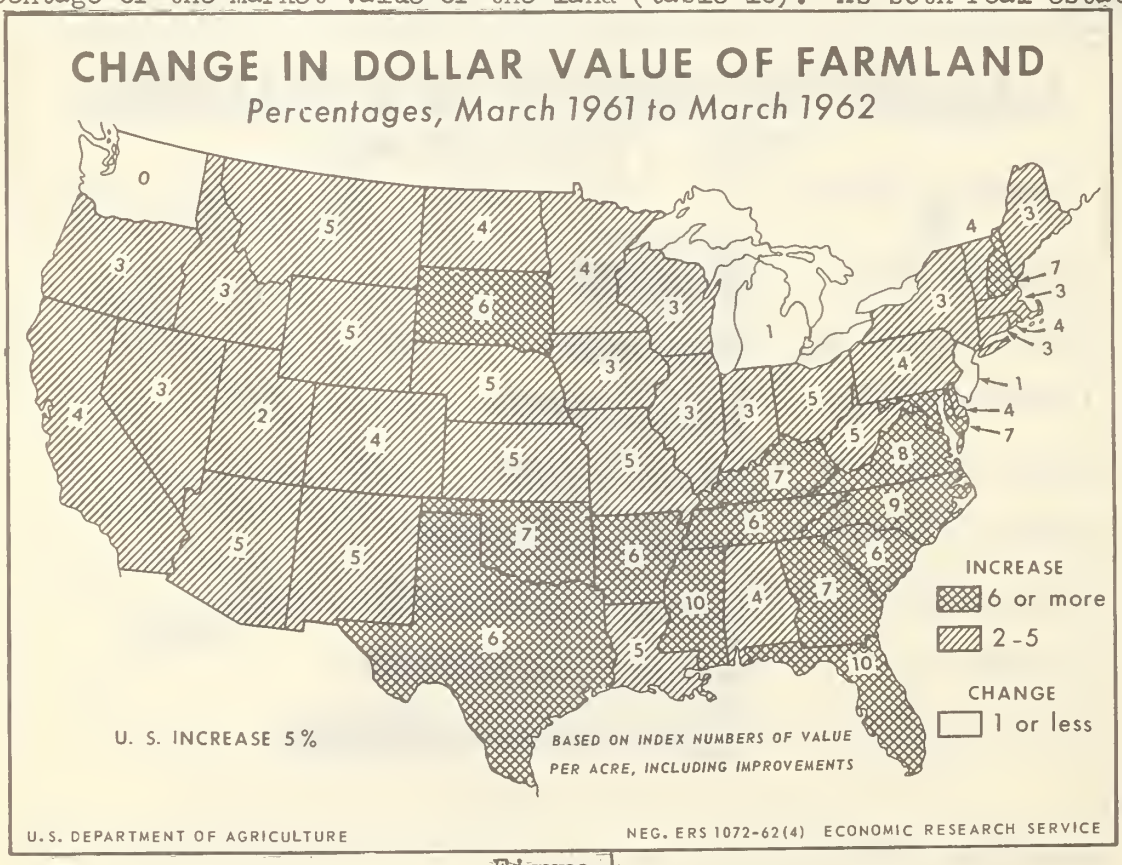

Figure 4

Table 9. - Farms rented wholly for cash: Gross cash rent per acre and ratio of rent to value, Corn Belt, Lake States, and Northern Plains, April 1, 1959-62 1/

State	Cash rent per acre				Ratio of gross rent to value			
	1959	1960	1961	1962	1959	1960	1961	1962
	Dol.	Dol.	Dol.	Dol.	Pct.	Pct.	Pct.	Pct.
Ohio	12.65	12.55	13.15	13.20	5.6	5.5	5.8	5.8
Indiana	17.70	18.10	18.25	19.05	7.0	6.7	7.0	7.4
Illinois	19.45	20.55	20.75	20.65	7.3	5.4	5.7	5.6
Iowa	16.80	17.40	17.10	18.30	6.2	6.2	6.5	6.5
Missouri	10.00	9.00	9.95	9.60	7.8	7.3	7.5	6.8
Michigan	11.80	12.60	12.45	12.95	6.0	6.4	6.0	6.1
Wisconsin	12.65	13.60	12.90	13.20	8.6	8.7	8.1	8.3
Minnesota	13.35	13.45	13.65	13.95	7.0	7.1	7.2	7.4
North Dakota	4.55	4.75	4.55	4.65	9.1	8.9	8.4	8.3
South Dakota	5.15	5.20	5.70	5.20	6.8	7.1	7.3	6.7
Nebraska	7.90	7.40	8.05	9.90	7.0	6.1	6.5	7.4
Kansas	6.90	7.25	7.10	7.90	6.7	6.5	6.0	6.8

1/ Estimates based on data supplied by Statistical Reporting Service, USDA.

Table 10. - Pastureland: Gross cash rent per acre and ratio to value, Corn Belt, Lake States, and Northern Plains, April 1, 1959-62 1/

State	Cash rent per acre				Ratio of gross rent to value			
	1959	1960	1961	1962	1959	1960	1961	1962
	Dol.	Dol.	Dol.	Dol.	Pct.	Pct.	Pct.	Pct.
Ohio	6.80	7.00	7.00	6.85	5.0	5.0	4.9	4.8
Indiana	8.45	8.75	9.40	10.05	4.9	4.7	5.1	5.8
Illinois	8.30	8.80	8.20	8.40	3.7	3.6	3.7	3.8
Iowa	9.35	9.20	9.10	9.60	5.2	5.2	5.4	5.3
Missouri	5.70	5.40	6.10	6.15	6.4	5.9	6.1	6.0
Michigan	4.65	5.05	4.60	5.15	6.0	6.3	5.6	5.9
Wisconsin	5.30	6.05	5.55	5.80	8.6	9.1	8.3	8.6
Minnesota	5.80	6.30	6.40	6.35	6.6	7.0	7.3	7.5
North Dakota	1.70	1.75	1.80	1.90	6.2	5.9	5.9	5.5
South Dakota	2.15	2.30	2.65	2.50	5.3	5.5	6.0	5.4
Nebraska	4.05	4.15	4.15	5.05	5.8	5.8	5.8	7.1
Kansas	3.45	3.50	3.25	3.70	5.1	5.0	4.9	5.1

1/ Estimates based on data supplied by Statistical Reporting Service, USDA

taxes per acre and building expenses also are lower, the net returns to owners of pasture land have been close to those realized for whole farms.

The cost of obtaining pasture on a per-head basis also inched upward in 1962 (table 11). Rates vary from a low of $1.30 per head per month in the Delta States to a high of nearly $4.00 in the Pacific States. The national average advanced 10 cents per head to $2.90.

Table 11. - Average rate per head per month for pasturing cattle on privately owned land, 1961 and 1962 seasons, by farm production regions 1/

Region	Rate per head April 1		Region	Rate per head April 1	
	1961	1962		1961	1962
	Dollars	Dollars		Dollars	Dollars
Northeast 2/	2.50	2.65	Delta States	1.10	1.30
Lake States	1.80	1.80	Southern Plains	2.20	2.25
Corn Belt	2.25	2.20	Mountain	3.05	3.15
Northern Plains	3.00	3.10	Pacific	3.70	3.95
Appalachian	2.10	2.15			
Southeast	1.75	1.85	United States 3/	2.80	2.90

1/ Estimates supplied by Statistical Reporting Service, USDA.
2/ Includes only New York, Pennsylvania, New Jersey, Delaware, and Maryland.
3/ Based on 42 States.

COSTS BY TYPE OF FARM

Farmers have available a wide variety of production resources and materials, which they use in many different combinations. Changes in prices of production items, discussed in the foregoing sections, do not affect all farmers alike. Costs vary significantly from one area and type of farm to another. The series on farm costs and returns, representative of important segments of the U. S. agricultural industry, provides a useful picture of some of these differences. 1/ The types of farms included in these series, and the areas in which they are commonly found, are shown in figure 5. The diversity of resource combinations and size of operation found among these farm types is shown in table 12.

An important indication of the diversity of U. S. agriculture, as represented by these farm series, is given by the relative importance of three groups of operating inputs 2/--hired labor, farm-produced inputs (feed, seed and livestock), and other operating inputs, shown in table 13. Although the percentage share of hired labor used has consistently declined on these farms since the late 1940's, it still accounted for more than a fourth of all

1/ For the latest annual publication of the data for these farms, see Farm Costs and Returns - Commercial Farms by Type, Size, and Location, A. I. B. 230, revised June 1961, Economic Research Service, USDA.
2/ Operating inputs are total productive inputs exclusive of interest on investment and operator and family labor.

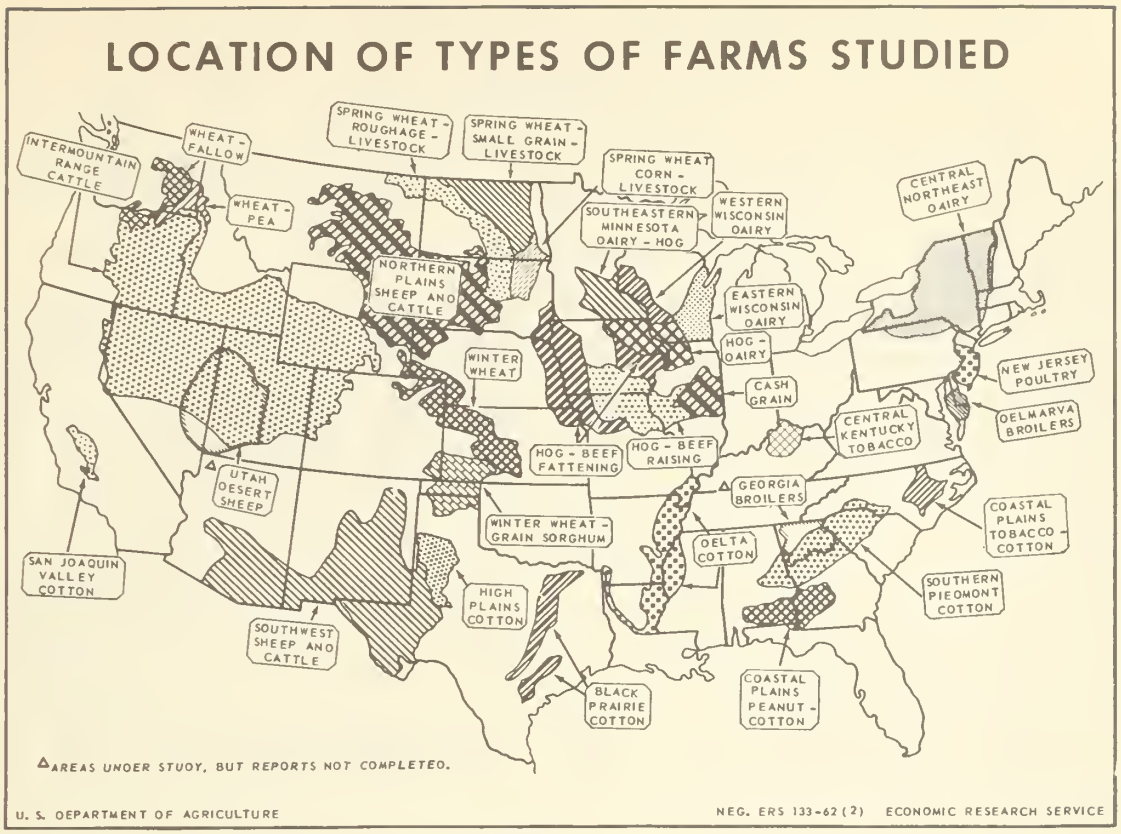

Figure 5

operating inputs on five types of farms in 1961; on several others, hired labor accounted for less than 5 percent. With such wide differences in the relative importance of hired labor, the impact of changes in farm wage rates differs greatly from one type of farm to another. In addition, changes in wage rates differ markedly from one region to another.

Not only are some items of expenditure more important on some types of farms than on others, but prices paid for the various production items have not changed at the same rate. Among the 38 types of farms for which data are available, the index of prices paid for goods and services used in production in 1961 varied from an index of 91 on egg-producing farms in New Jersey to 113 on large tobacco-cotton farms in the Coastal Plain of North Carolina (table 14).

Significant changes in the cost of inputs on the same type of farm sometimes result from shifts in the combination of inputs from one year to the next. For example, on western livestock ranches, drought conditions may force ranchers to buy additional quantities of hay to carry their stock. Since hay is relatively high priced at such times in these areas, a noticeable rise in costs on these ranches often results.

Prices paid in 1961 on nearly all of these 38 types of farms were somewhat higher than in the late 1940's. Prices received for farm products, however, were generally lower, except on the tobacco farms and western cattle

Table 12.- Resources, costs and returns, per farm, specified types of commercial farms, 1961 1/

Type and location of farm 2/	Size of farm: Unit	Size of farm: Number or acres	Total labor used	Total farm capital, January 1	Gross farm income 3/	Operating expenses 4/	Net farm income 5/
			Hours	Dollars	Dollars	Dollars	Dollars
Dairy farms:							
Central Northeast	Milk cows	28.9	4,440	41,500	13,511	8,921	4,590
Eastern Wisconsin:							
Grade A	do.	30.2	4,460	62,350	15,843	8,905	6,938
Grade B	do.	20.4	3,670	41,170	9,330	5,863	3,467
Western Wisconsin, Grade B	do.	22.0	4,190	32,860	9,577	5,217	4,360
Dairy-hog farms, Southeastern Minnesota	do.	20.5	4,060	49,860	11,010	6,520	4,490
Corn Belt farms:							
Hog-dairy	Cropland	105	4,260	56,720	13,796	7,622	6,174
Hog fattening-beef raising	do.	112	3,530	51,500	9,554	5,572	3,982
Hog-beef fattening	do.	143	4,200	86,770	25,705	17,579	8,126
Cash grain	do.	193	3,130	105,940	17,245	8,367	8,878
Egg-producing farms, New Jersey	Layers	5,010	5,250	44,740	28,511	23,838	4,673
Cotton farms:							
Southern Piedmont	Cropland	98	4,860	26,300	6,447	3,776	2,671
Mississippi Delta:							
Small	do.	39	3,440	13,840	4,685	2,692	1,993
Large-scale	do.	640	33,920	214,440	75,696	45,317	30,379
Texas:							
Black Prairie	do.	210	3,060	49,630	8,385	4,883	3,502
High Plains (nonirrigated)	do.	368	3,170	60,750	20,646	7,318	13,328
High Plains (irrigated)	do.	334	7,900	117,310	39,414	16,967	22,447
San Joaquin Valley, Calif. (irrigated):							
Cotton-specialty crop	do.	322	13,220	278,360	100,710	84,386	16,324
Cotton-general crop (medium-sized)	do.	322	10,010	275,530	71,642	45,816	25,826
Cotton-general crop (large)	do.	1,124	30,350	944,860	226,245	145,341	80,904
Peanut-cotton farms, Southern Coastal Plains	do.	75	3,910	17,180	7,793	3,812	3,981
Tobacco farms:							
North Carolina Coastal Plain:							
Tobacco-cotton (medium-sized)	do.	36	5,790	25,970	9,002	5,138	3,864
Tobacco-cotton (large)	do.	57	8,800	44,880	14,955	9,680	5,275
Tobacco (small)	do.	18	3,260	12,940	4,868	1,634	3,234
Kentucky Bluegrass:							
Tobacco-livestock, inner area	do.	60	4,680	100,170	15,935	8,484	7,451
Tobacco-dairy, intermediate area	do.	24	3,510	22,130	5,493	2,584	2,909
Tobacco-dairy, outer area	do.	42	4,690	41,250	10,753	5,631	5,122
Spring wheat farms:							
Northern Plains:							
Wheat-small grain-livestock	do.	573	2,000	52,110	5,800	5,450	350
Wheat-corn-livestock	do.	376	3,880	52,870	10,481	4,728	5,753
Wheat-roughage-livestock	do.	525	2,710	49,070	5,830	4,407	1,423
Winter wheat farms:							
Southern Plains:							
Wheat	do.	591	2,970	96,310	17,097	6,478	10,619
Wheat-grain sorghum	do.	573	3,030	89,440	18,097	5,902	12,195
Pacific Northwest:							
Wheat-pea	do.	532	3,490	175,280	21,742	10,308	11,434
Wheat-fallow	do.	983	3,670	148,280	21,928	9,988	11,940
Cattle ranches:							
Northern Plains	Cows	98.6	3,650	83,890	12,405	6,128	6,277
Intermountain Region	do.	138.8	5,020	86,080	16,841	6,813	10,028
Southwest	do.	140.4	3,590	160,700	17,325	9,158	8,167
Sheep ranches:							
Northern Plains	Sheep	1,362	7,190	96,740	20,566	13,735	6,831
Southwest	do.	1,496	6,100	205,200	21,415	12,763	8,652

1/ Preliminary.
2/ All except cotton farms in California, and large-scale cotton farms in the Mississippi Delta are family-operated.
3/ Includes Government payments.
4/ Includes property taxes, but no rent or interest.
5/ Returns to capital and unpaid labor.

Table 13.- Percentage distribution of operating inputs, specified types of commercial farms, 1947-49 and 1961 1/

Type and location of farm	1947-49			1961		
	Hired labor	Feed, seed and live-stock	Other oper-ating inputs	Hired labor	Feed, seed and live-stock	Other oper-ating inputs
	Percent	Percent	Percent	Percent	Percent	Percent
Dairy farms:						
Central Northeast	11	49	40	5	49	46
Eastern Wisconsin:						
Grade A	2/	2/	2/	5	17	78
Grade B	8	23	69	1	28	71
Western Wisconsin, Grade B	9	29	62	4	28	68
Dairy-hog farms, Southeastern Minnesota	9	24	67	4	26	70
Corn Belt farms:						
Hog-dairy	14	26	60	5	34	61
Hog fattening-beef raising	11	26	63	4	32	64
Hog-beef fattening	6	58	36	3	68	29
Cash grain	8	16	76	4	17	79
Egg-producing farms, New Jersey	7	80	13	3	84	13
Cotton farms:						
Southern Piedmont	3/29	11	60	3/26	8	66
Mississippi Delta:						
Small	33	14	53	18	11	71
Large-scale	3/60	5	35	3/34	6	60
Texas:						
Black Prairie	15	5	80	10	8	82
High Plains (nonirrigated)	38	8	54	9	6	85
High Plains (irrigated)	41	5	54	26	4	70
San Joaquin Valley, Calif. (irrigated):						
Cotton-specialty crop	27	16	57	13	16	71
Cotton-general crop (medium-sized)	46	2	52	17	3	80
Cotton-general crop (large)	50	2	48	21	3	76
Peanut-cotton farms, Southern Coastal Plains	14	17	69	10	13	77
Tobacco farms:						
North Carolina Coastal Plain:						
Tobacco-cotton (medium-sized)	3/50	7	43	3/42	7	51
Tobacco-cotton (large)	3/51	7	42	3/46	7	47
Tobacco (small)	19	19	62	14	20	66
Kentucky Bluegrass:						
Tobacco-livestock, inner area	31	13	56	20	23	57
Tobacco-dairy, intermediate area	9	14	77	6	10	84
Tobacco-dairy, outer area	14	19	67	9	23	68
Spring wheat farms:						
Northern Plains:						
Wheat-small grain-livestock	20	4	76	8	16	76
Wheat-corn-livestock	14	13	73	4	22	74
Wheat-roughage-livestock	12	13	75	4	24	72
Winter wheat farms:						
Southern Plains:						
Wheat	12	20	68	6	25	69
Wheat-grain sorghum	13	15	72	4	27	69
Pacific Northwest:						
Wheat-pea	17	7	76	9	6	85
Wheat-fallow	23	11	66	11	8	81
Cattle ranches:						
Northern Plains	9	14	77	3	18	79
Intermountain Region	16	12	72	15	19	66
Southwest	9	51	40	8	43	49
Sheep ranches:						
Northern Plains	21	36	43	18	42	40
Southwest	14	53	33	17	43	40

1/ At constant prices. 2/ Not available. 3/ Includes payments to croppers.

Table 14. - Prices paid, prices received and price ratio, specified types of commercial farms, 1947-49 and 1961

(Index numbers 1957-59=100)

Type and location of farm	Prices paid 1/		Prices received		Ratio prices received to prices paid	
	1947-49	1961 2/	1947-49	1961 2/	1947-49	1961 2/
Dairy farms:						
Central Northeast	86	104	103	97	120	93
Eastern Wisconsin:						
Grade A	3/	106	3/	105	3/	99
Grade B	87	105	116	105	133	100
Western Wisconsin, Grade B	89	106	114	105	128	99
Dairy-hog farms, Southeastern Minnesota	82	105	117	106	143	101
Corn Belt farms:						
Hog-dairy	83	103	121	102	146	99
Hog-fattening-beef raising	81	104	122	101	151	97
Hog-beef fattening	84	100	121	95	144	95
Cash grain	75	103	131	102	175	99
Egg-producing farms, New Jersey	111	91	151	98	136	108
Cotton farms:						
Southern Piedmont	86	103	102	100	119	97
Mississippi Delta:						
Small	90	102	104	103	116	101
Large-scale	90	103	106	104	118	101
Texas:						
Black Prairie	87	102	113	107	130	105
High Plains (nonirrigated)	84	108	114	106	136	98
High Plains (irrigated)	89	104	108	107	121	103
San Joaquin Valley, Calif. (irrigated):						
Cotton-specialty crop	85	108	112	91	132	84
Cotton-general crop (medium-sized)	76	108	104	105	137	97
Cotton-general crop (large)	75	106	104	105	139	99
Peanut-cotton farms, Southern Coastal Plains	87	99	108	101	124	102
Tobacco farms:						
North Carolina Coastal Plain:						
Tobacco-cotton (medium-sized)	79	112	89	113	113	101
Tobacco-cotton (large)	79	113	90	113	114	100
Tobacco (small)	83	106	87	114	105	108
Kentucky Bluegrass:						
Tobacco-livestock, inner area	79	103	87	101	110	98
Tobacco-dairy, intermediate area	81	104	86	104	106	100
Tobacco-dairy, outer area	82	104	88	103	107	99
Spring wheat farms:						
Northern Plains:						
Wheat-small grain-livestock	83	101	123	123	148	122
Wheat-corn-livestock	85	102	123	104	145	102
Wheat-roughage-livestock	85	98	116	110	136	112
Winter wheat farms:						
Southern Plains:						
Wheat	80	105	114	102	142	97
Wheat-grain sorghum	80	103	119	105	149	102
Pacific Northwest:						
Wheat-pea	80	101	115	105	144	104
Wheat-fallow	80	104	108	104	135	100
Cattle ranches:						
Northern Plains	79	94	99	98	125	104
Intermountain Region	73	107	97	98	133	92
Southwest	86	107	94	97	109	91
Sheep ranches:						
Northern Plains	82	98	106	81	129	83
Southwest	93	105	102	86	110	82

1/ Including wages paid to hired farm labor. 2/ Preliminary. 3/ Not available.

ranches. The ratio of prices received to prices paid was lower in 1961 than in the 1947-49 period on all except one of the farm types.

The increases in prices paid have not resulted in a proportionate rise in operating costs per unit of production, however, because of substantial improvements in productivity. This has tended to retard the rise in operating cost per unit of output (table 15).

But despite these gains in productivity, operators of more than three-fourths of these types of farms netted a smaller share of their gross income dollar in 1961 than in the 1947-49 period. Particularly hard hit were operators of wheat-small grain-livestock and wheat-roughage-livestock farms in the Northern Plains, because of severe drought conditions that occurred in these areas in 1961.

Table 15.- Production, prices, costs, and income, specified types of commercial farms, 1961 1/

Type and location of farm	Index 1957-59=100		Net income per dollar of gross income		Index 1957-59=100		
	Operating expenses per unit of production	Production per unit of inputs	1947-49	1961	Gross farm income	Total operating expenses	Net farm income
			Dollars	Dollars			
Dairy farms:							
Central Northeast	103	104	0.43	0.34	117	122	107
Eastern Wisconsin:							
Grade A	101	109	2/	.44	123	118	130
Grade B	97	109	.40	.37	119	110	137
Western Wisconsin, Grade B	98	108	.46	.46	119	112	129
Dairy-hog farms, Southeastern Minnesota	110	100	.54	.41	119	124	113
Corn Belt farms:							
Hog-dairy	108	101	.54	.45	111	114	106
Hog fattening-beef raising	113	98	.56	.42	111	120	100
Hog-beef fattening	106	100	.54	.32	114	122	100
Cash grain	111	109	.64	.51	120	109	132
Egg-producing farms, New Jersey	88	103	.24	.16	108	96	268
Cotton farms:							
Southern Piedmont	97	109	.44	.41	118	115	122
Mississippi Delta:							
Small	101	105	.59	.43	119	119	120
Large-scale	89	114	.31	.40	122	108	150
Texas:							
Black Prairie	104	100	.51	.42	117	115	120
High Plains (nonirrigated)	85	132	.54	.65	152	121	178
High Plains (irrigated)	92	115	.51	.57	138	119	158
San Joaquin Valley, Calif. (irrigated):							
Cotton-specialty crop	111	98	.40	.16	98	120	50
Cotton-general crop (medium-sized)	112	96	.41	.36	105	112	94
Cotton-general crop (large)	113	95	.41	.36	106	114	95
Peanut-cotton farms, Southern Coastal Plains	91	114	.61	.51	134	124	147
Tobacco farms:							
North Carolina Coastal Plain:							
Tobacco-cotton (medium-sized)	101	109	.45	.43	124	114	139
Tobacco-cotton (large)	100	109	.34	.35	124	113	149
Tobacco (small)	95	111	.65	.66	127	107	140
Kentucky Bluegrass:							
Tobacco-livestock, inner area	105	98	.52	.47	111	116	105
Tobacco-dairy, intermediate area	101	105	.60	.53	112	108	116
Tobacco-dairy, outer area	108	102	.56	.48	116	119	113
Spring wheat farms:							
Northern Plains:							
Wheat-small grain-livestock	203	52	.58	.06	57	94	8
Wheat-corn-livestock	95	98	.62	.55	107	99	113
Wheat-roughage-livestock	139	69	.59	.24	68	90	38
Winter wheat farms:							
Southern Plains:							
Wheat	95	109	.70	.62	118	121	116
Wheat-grain sorghum	83	122	.69	.67	131	119	138
Pacific Northwest:							
Wheat-pea	113	86	.65	.53	92	101	85
Wheat-fallow	123	83	.66	.54	86	104	76
Cattle ranches:							
Northern Plains	87	107	.57	.51	105	94	120
Intermountain Region	115	94	.74	.60	96	111	88
Southwest	98	110	.43	.47	110	111	109
Sheep ranches:							
Northern Plains	108	93	.43	.33	87	108	63
Southwest	96	108	.31	.40	99	108	89

1/ Preliminary.
2/ Not available.

THE EFFECTS OF LAND RETIREMENT PROGRAMS ON FARM COSTS

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Land retirement programs have appeared on the agricultural scene twice in recent history. During the 1930's, some land was retired from production under the various agricultural adjustment programs. In 1956 the Soil Bank Act was passed, and many contracts entered into under that program are still in effect. In 1962, several bills which include land retirement features in varying degrees have been introduced into Congress.

What is meant by land retirement? Land retirement means changing land use from crop production to a soil-conserving use with no crop being harvested or pastured. This definition would exclude programs that reduce acreage of one crop but allow the land to be used for the production of other crops.

Participation in a land retirement program causes significant changes in costs on individual farms. Farm costs are affected differently according to the portion of the farm included in the program, the cost structure of the farm business, and the time span and other provisions of the program.

A farmer's cost and income structure can be thought of in three components: (1) fixed costs, (2) variable cash costs, and (3) usual, or expected, net income to operator and family labor and management. If he is to continue production over time the first two of these must be paid. And a farmer will tend to adjust his farm organization so as to maximize the third.

It is assumed that, under a land retirement program, a farmer receives a payment for retiring land equal to the value of the crops normally produced less the variable cash costs of production. Or, stating it another way, the payment is equal to the fixed costs plus usual net income. A payment of this magnitude would ordinarily be the minimum required to provide an economic incentive to retire land, unless the farmer has other uses for the idled resources. 3/

A reduction in the acreage of crops produced reduces the quantities needed of such variable resources as seed, fuel, fertilizer, and pesticides. This immediately reduces total variable expenses of crop production proportional to the reduction in acreage planted, unless the farmer increases his rates of application of the variable resources on the remaining acreage. Farmers probably do increase the rate of application of variable resources and thus increase yields; and land selection also is an important factor tending

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3/ A farmer may have other profitable alternatives for the use of his labor; also, he may attach some economic value to improving the fertility of the retired land. Therefore, the payment for land retirement could be less than the proportionate share of fixed cost plus usual net income. But without a basis for estimating the value of these alternatives, they are not included in this discussion. This assumption does not invalidate the analysis; it only affects the magnitude of the changes in income used in the example.

to push up average yields on the land remaining in production. A study of changes in yields of quota and nonquota crops revealed that yields of quota crops (i.e., crops of which the acreage grown was restricted) and yields of nonquota crops have both increased about 35 percent from 1953 to 1960. 4/ Apparently the application of technology on crops grown without acreage restriction has changed as much as it has on restricted crops. This conclusion is also supported by data on amount of fertilizer applied to quota and nonquota crops.

The foregoing discussion assumes that only part of the cropland on a farm is retired from use (table 16, blocks 1a and 1c). If all of the cropland on a farm is placed in a cropland retirement program (blocks 1b and 1d, table 16), variable costs of crop production are eliminated. The only costs of this type which remain are those for establishing an adequate cover on land that does not already have one. These cash costs have been largely covered by practice payments under recent government programs. There may be some variable costs for clipping and pest control, but under previous land retirement programs these costs have been small in most cases.

Table 16.- Changes in farm costs under alternative provisions of land retirement programs

Cost items	Contract for 1 year		Contract for several years	
	Part farm (a)	Whole farm (b)	Part farm (c)	Whole farm (d)
Variable cost (1)	decreased	eliminated	decreased	eliminated
Fixed costs (2)	constant	constant	constant or decreased	decreased considerably

What happens to fixed costs? Under one-year contracts, fixed costs are not likely to change much in most farm situations, even if the whole farm were placed under contract (table 16, blocks 2a and 2b). The disposal for one year of fixed inputs such as breeding herds or machinery would not usually be expedient.

Under whole-farm contracts extending for several years (table 16, block 2d) farmers may be expected to decrease their fixed costs considerably by disposing of some of their fixed inputs, such as machinery, on which obsolescence would continue regardless of whether or not it was used.

Under part-farm contracts extending for several years (table 16, block 2c), a farmer can choose from among alternatives which may or may not reduce fixed costs. If he signs a part-farm contract, chooses to retain all of his

4/ Christensen, R. P. and Aines, R. O., "How Have Acreage-Control Programs Affected Crop Yields." Jour. of Farm Econ., Vol. 43, No. 5, pp. 1336-1337, Dec. 1961.

fixed inputs, and farms only the land not under contract, his total fixed costs for the farm will remain unchanged. On the other hand, if he chooses to dispose of some of his fixed inputs, his fixed costs would decrease. Perhaps the most profitable alternative would be to retain all of his fixed inputs and obtain additional land to replace that which has been retired. Let's investigate this alternative.

As assumed previously in this discussion, in order for a farmer to be attracted, on economic grounds, to participate in a land retirement program, the payment he receives must at least cover his fixed costs plus usual, or expected, net income from his normal method of operation. Program participation leaves some of his fixed inputs unused, but their costs are covered by the payments. That is, he has a bundle of "free" productive resources available, which we shall call "free fixed inputs," consisting of all the fixed costs (such as depreciation on machinery and buildings) associated with the land retired, except land charges of rent, or interest on land investment and taxes. The land charges are not "free fixed inputs" because they are tied to the parcel of land retired and cannot be transferred to other land.

With this bundle of free fixed inputs available, the economically logical response for a profit-maximizing farmer would be to rent or purchase a unit of land equal to the acreage he has retired, on which to apply these inputs. As a result of having the "free fixed inputs," a farmer can afford to pay a higher annual charge for the additional land than if he needed additional machinery and other fixed cost items to operate the additional land.

The following example illustrates the changes in incomes and costs on a cash crop farm under a land retirement program according to whether a farmer chooses to farm only the land not retired, or to obtain the additional land. Gross value of production is assumed to be $60 an acre; variable cash costs are $20 per acre; and, in accordance with our earlier assumption, payments for land retirement are equal to the difference between these two, or $40 an acre.

In this example, net income is raised $1,200 as a result of obtaining additional land. This provides a strong incentive to find additional land on which to use the "free fixed inputs," or to use them on land on the farm that would otherwise be idle. In the example, we have assumed that a farmer could obtain additional land at an annual cost of $20 an acre for rent, or for interest and taxes if he chose to buy land. Because of the potentially high rate of return for additional land, other farmers participating in a land retirement program would have the same incentive. With limited cropland available, competition among farmers would bid up the price and rental rates of available land. Changes in land prices would depend upon (1) the expected duration of the land retirement program, (2) how much of the additional net income farmers were willing to pay for additional land (or stated differently, how little they would be willing to accept for their labor and management), and (3) the rate of capitalization of the additional return attributable to land.

Changes in income and costs under a land retirement program

Item	No program	Land Retirement Program	
	Usual operation	No additional land	Additional land rented or purchased
	Acres	Acres	Acres
Total cropland	180	180	240
Land retired	0	60	60
Land in production	180	120	180
	Dollars	Dollars	Dollars
Gross income:			
From production	10,800	7,200	10,800
For land retirement	0	2,400	2,400
Total	10,800	9,600	13,200
Fixed costs:			
Land charges 1/	3,600	3,600	4,800
Other	2,500	2,500	2,500
Variable cash costs	3,600	2,400	3,600
Net income to operator and family labor and management	1,100	1,100	2,300

1/ Annual rent, or taxes plus interest on land investment.

FARMERS AND THE COST-PRICE SQUEEZE

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The cost-price squeeze in farming has been a much discussed subject in recent years. The term means a narrowing of the profit margin that occurs when product prices fall or input prices rise, or when both happen, as in the 1950's. Effects of the squeeze have been lessened because with new technology farmers increased their volume of output through higher yields and larger farms. There was little opportunity to reduce costs per unit of output. Increased yields and size of farms occurred because they were profitable, whether or not they reduced unit costs.

The impact of the cost-price squeeze on the grain farmer who could not or did not increase output is illustrated by Situation A in table 17. From 1950 to 1960, gross income fell and direct expenses of production rose so that net farm return was reduced more than half, unless expenses of production could be reduced. But that was nearly impossible in the face of rising input prices which, on the average, rose about 25 percent from 1950 to 1960--an event outside farmers' control. No further savings were possible through mechanization, because grain farms already were mechanized. Had the example farmer by some device reduced his expenses even 10 percent, he would have regained only a fraction of his former income. The net income shown in the table must cover return to land and other capital as well as operator labor and management.

The chief avenue of gain for most grain farmers was to expand their output, so they could sell more product. If they could also reduce unit costs, that would be advantageous. But expanded output was to be desired even with no reduction or a moderate increase in unit costs. What mattered most was increased sales volume as something more attainable.

In what follows we discuss the impact of increasing output in two ways--increasing yields and expanding scale of operation.

Increased Crop Yields

Some grain farmers have fended off the cost-price squeeze of recent years through an opportune circumstance--the new, yield-increasing technology that was becoming available. It enabled them to increase their total output per farm and in the process add more to their income than to their expenses. Although the technology did slightly reduce costs per unit of output, its chief impact was on volume of output, and hence gross income. Let's take an example.

The example farm shown as Situation B (table 17) increased inputs (such as fertilizer) by $10 an acre--from a total of $37.50 to $47.50 an acre. This increased the output by 20 units an acre, thereby adding $22 an acre to gross income, above what it would have been without the new inputs. This example illustrates the kind of adjustment that was available and that was made in those areas where grain (corn or wheat) yields have responded to fertilizer or other yield-increasing inputs. Typically, corn yields have increased a third

Table 17.--Results of adjustments on grain farms from 1950 to 1960 1/

Item	1950	1960			
		Situation A	Situation B	Situation C	Situation D
		Same acreage, same yield	Same acreage, increased yield	Larger acreage, same yield	Larger acreage, increased yield
Per farm	Acres	Acres	Acres	Acres	Acres
Acreage	100	100	100	150	150
	Bushels	Bushels	Bushels	Bushels	Bushels
Yield per acre	60	60	80	60	80
Total production	6,000	6,000	8,000	9,000	12,000
	Dollars	Dollars	Dollars	Dollars	Dollars
Sales	9,000	6,600	8,800	9,900	13,200
Expenses	3,000	3,750	4,750	5,625	7,125
Net return	6,000	2,850	4,050	4,275	6,075
Return per acre					
Gross	90.00	66.00	88.00	66.00	88.00
Expenses	30.00	37.50	47.50	37.50	47.50
Net return	60.00	28.50	40.50	28.50	40.50
Per unit of output					
Gross	1.50	1.10	1.10	1.10	1.10
Expenses	.50	.625	.594	.625	.594
Net return	1.00	.475	.506	.475	.506

1/ Illustrations based on unpublished data in Farm Economics Division, ERS.

in the central Corn Belt during the last 10 years. Wheat yields also increased about a third in the eastern soft red winter wheat States and in the Pacific Northwest. Increases in the Plains have been more modest and have been due mainly to land selection under reduced acreage allotments.

In the example just shown (Situation B), the net gain of $12 an acre from the increased yield meant that the net farm returns were considerably higher in 1960 than they otherwise would have been, but not as high as they were in 1950. Improved yields alone were not enough to maintain the earlier (1950) level of income. Note also in this instance that reduction in cost per unit of output (unit cost) was moderate--from 62.5 cents to 59.4 cents. Yet it accompanied a 33-percent increase in yield. The greater contribution to net returns was from the increased total output and sales.

Some people maintain that farmers increased their yields specifically to offset the price-cost squeeze. A more likely view is that farmers would have adopted the new technology anyway, simply because it was profitable. True, it would have been even more profitable without the cost-price squeeze.

Increased Size of Farm

Now suppose a grain farmer has already been producing at his optimum yield per acre. Perhaps he could have applied more fertilizer but the added cost would have absorbed the added value of output. Or perhaps the crop would not respond to fertilizer--as in some dry regions. In both instances the farmer already had adopted all the profitable yield-increasing technologies. Some farmers in this predicament were able to increase their output and net farm returns by expanding their farming operations, as in the following example.

The example farm shown as Situation C (table 17), has increased its scale of operation by 50 percent--from 100 to 150 acres. Production, sales, and expenses are now half again larger than before the expansion. We will assume the expansion did not change income or expenses per acre, or per unit of output. But because of the expansion, total net farm returns are a half larger. However, returns are lower than they were in 1950 before the expansion, when grain prices were higher.

An expansion in size of operating unit may be profitable aside from any reduction in unit costs (no change was assumed in the example). Expansion would have been profitable even had it caused unit costs to rise, say 10 percent. Economies of scale are desirable, but not essential to profitable expansion. In fact, some wheat farms twice the average size and larger show slightly higher than average unit costs. The increased costs per unit of output occurred in machinery, depreciation, and in hired services. Larger operators kept newer machines and chose to have their wheat custom harvested instead of owning combine-harvesters and hiring the men to operate them. Thus, cost of harvesting per bushel was higher than for a neighbor who owned a combine and harvested all his wheat with it--but not enough higher to cause the larger operator to own the equipment.

Increased Yields and Increased Size of Farm

Some farmers have been able both to increase their yields and expand their size of operation. These changes on typical grain farms in selected areas are shown in table 18.

To illustrate the combined impact of increased yields and expanded operations, see the example shown as Situation D in table 17. This farmer increased his yield by adding inputs as in Situation B and expanded his operation 50 percent as in Situation C. As a result, total farm output and sales were doubled. Total farm expenses also increased, both by the addition of yield-increasing inputs and by the expansion in acreage. Total net farm returns were maintained at about the same level as in 1950.

In this example also we have assumed no change in cost per unit of output due to expanded acreage. The adjustments made have slightly reduced per unit costs and have slightly increased net return per unit of product due to the addition of yield-increasing inputs such as fertilizer. Again, the main impact on net farm returns was from volume of output and sales.

There is a limit to which yield increases can be pushed. Expanding the size of unit may in some instances be more profitable than adding inputs so as to increase the yield per acre. Had the example farmer doubled the size of his operation without any change in practices and yields, he would have nearly maintained his 1950 level of income ($5,700 versus $6,000).

Appraisal

In the last decade, farmers who could adopt yield-increasing technologies or could expand their operations have, in part, offset the pressure of the cost-price squeeze. There was little opportunity to reduce cost per unit of product because input prices were rising. Increased volume of output, made possible by new technology, offered a significant opportunity for gain. Increased volume was the chief incentive to an increased size of farm in recent years, rather than reduced costs per unit of product. Farmers, individually, expanded their output because it was profitable. The examples shown give dimension to the effects of the cost-price squeeze and to the yield and farm size question. While some farmers' adjustments exceeded the examples, many others have fallen short. Finally, the examples, though for grain farms, apply in essence to the crop activities on other farms.

Table 18. - Farm size and yields, typical grain farms, 1950 and 1960 1/

Type of farm	Crop acres per farm				Yield per acre 2/				
	1950	1960	Difference		Crop	1950	1960	Difference	
	Acres	Acres	Acres	Pct.		Bu.	Bu.	Bu.	Pct.
Corn Belt:									
Cash grain	190	210	20	10	Corn	60	60	20	33
Grain-hog dairy	100	110	10	10	"	60	80	20	33
Grain-hog-beef fattening	135	155	20	15	"	55	70	15	27
Spring Wheat:									
Wheat-small grain	500	570	70	14	Wheat	15	18	3	20
Wheat-corn	350	370	20	6	"	15	18	3	20
Wheat-roughage	450	520	70	16	"	14	16	2	14
Southern Plains:									
Wheat	500	580	80	16	Wheat	16	21	5	31
Wheat-grain sorghum	510	570	60	12	"	15	20	5	33
Pacific Northwest:									
Wheat-pea	450	525	75	17	Wheat	33	45	12	36
Wheat-fallow	930	980	50	5	"	25	28	5	22

1/ From unpublished data in Farm Economics Division, ERS.
2/ Approximate yield level for the period per harvested acre.

THE CHANGING CHARACTER OF FARM PRODUCTION COSTS

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In the days when Horace Greeley urged "Go West young man!" most of the equipment for a farm could be carried in or tied onto a covered wagon. The farmer then raised his own power, including the oats and hay to feed it, his own seed, soil fertility, fence posts, and building materials. Besides, his labor and that of his family made a much greater proportionate contribution to production than it does today. The family wood supply for heating his home as well as garden produce and meat came from the farm. The preserving and canning were done by the operator and his wife. Under those circumstances, the main means of feeding the expanding population was to bring new land under cultivation--the tilling of more land by more farmers.

That pattern has changed radically. We use about the same acreage as in 1920, but half as many man-hours of labor in farming. With fewer, larger, and more specialized farms, production per acre and per farm has increased steadily, and the total farm output has almost doubled in the past four decades. Purchased items accounted for 40 percent of the total production inputs used by farmers in 1910, 49 percent in 1940, and 65 percent in 1960.

Production Expenses Increase

As a result of the trend toward commercialization of agriculture, production expenses of farm operators are many times greater than in Horace Greeley's day. Production expenses reached $26.4 billion in 1960, nearly four times as much as in 1940 (table 19). This increase resulted from higher prices (the index of prices paid rose from 49 in 1940 to 120 in 1960, with 1947-49= 100) and from greater quantities of purchased inputs (45 percent greater in 1960 than 20 years before).

Table 19.- Total gross farm income and production expenses, United States, 1940-44 to 1960

Period	Total gross farm income	Production expenses	
		Actual	Percentage of gross income
	Million dollars	Million dollars	Percent
1940-44	18,549	9,610	52
1945-49	31,053	16,268	52
1950-54	35,746	21,418	60
1955-59	35,883	23,877	67
1960	38,327	26,369	69

Source: The Farm Income Situation, July 1961, Economic Research Service, U. S. Department of Agriculture.

Increases in production expenses have outstripped gross farm income and the share of gross income taken by production expenses has risen. The percentage of gross farm income claimed by production expenses stood at nearly 70 percent in 1960 (table 19). This percentage was approached in 1921 and again in 1932, but the reasons were different. In those years, gross income had decreased sharply from the preceding years. But in 1960, gross income had been holding steady at a fairly high level while production expenses continued to increase. During the 1950's, both gross farm income and production expenditures increased, but the latter increased at a more rapid rate.

More Capital Used, Less Labor Hired

The American farmer has been making capital investments to expand output and to replace hired labor. The rate at which U. S. agriculture continues to mechanize is apparent from the changes in expenses for maintenance, repair and operation of capital items (buildings, machinery and equipment) relative to total outlays for hired farm labor (table 20). Costs of capital maintenance, repair and operation in 1960 were 4.5 times the 1940 figure, but hired labor increased only 2.8 times. This occurred even though farm wage rates rose much more sharply in that period than prices of farm machinery, motor fuel, repair parts and building materials. In 1940, U. S. farmers spent $1.75 for maintenance and operation of buildings and machinery for every dollar they paid for hired help. During the war, the ratio was even lower and reached $1.26 per dollar spent for hired labor. By 1960, it had risen to $2.77. Accordingly, the relative importance of capital-item expenses rose from about 27 percent of total production expenses in 1940 to nearly 31 percent in 1960; in the same period, hired labor dropped from 15 to 11 percent of the total.

Table 20.- Expenditures for maintenance and operation of capital items and wages paid to hired farm labor, United States, 1940-1960

Period	Depreciation, repairs, and operation of capital items	Wages paid to hired farm labor	Expenditures for maintenance and operation of capital items per dollar of wages paid
	Million dollars	Million dollars	Dollars
1940-44	2,438	1,628	1.50
1945-49	4,055	2,710	1.50
1950-54	6,565	2,758	2.38
1955-59	7,604	2,822	2.69
1960	8,130	2,935	2.77

Purchases From Other Farmers or Ranchers

In the days when young men were heeding Horace Greeley's bidding, farmers seldom purchased feed, seed or livestock. The chief occasion for the purchase of seed and livestock probably was at the time a young man started farming. Feed might be bought in a bad crop year--if anyone within hauling distance had any to sell. But now these purchases occur regularly. They are the largest items of production expenditures, and account for 18 percent of all production costs. Feed purchases rose from about $1 billion in 1940 to $4.8 billion in 1960; this represents a substantial increase in quantities bought, since prices did not quite double in that period.

Livestock purchases in 1960 were made at prices about 2.5 times their 1940 level, but expenditures for livestock in the later year were nearly five times those of the earlier one. And these data include only the inshipments of livestock from one State to another.

The volume of farm-produced inputs used--such as feed, livestock purchased, and seeds--indicates the extent to which specialization continues, in spite of the consolidation of farms. The actual exchanges are considerably larger than these figures indicate (table 21). Data on size of dairy herds and swine droves show fewer herds and droves but much larger size. On such farms, many economies of scale can be obtained by purchasing feed mixtures or handling fewer of the processes involved in producing and finishing livestock. For example, feeder pigs may be produced and sold by the smaller farm operators who are better able to provide the labor involved. These operators have fewer demands on their time than larger operators. The larger operator handles the stage of production that requires high amounts of capital, especially for feeds, but small amounts of labor.

Table 21.- Expenditures for purchased feed, livestock, and seed, United States, 1941-60

Period	Feed purchased	Livestock purchased	Seed purchased	Feed, livestock, and seed	
				Total expense	Percent of total production expense
	Mil. dol.	Mil. dol.	Mil. dol.	Mil. dol.	Percent
1941-45------	2,003	849	357	3,209	29.6
1956-60------	4,478	2,306	527	7,311	29.5

Increases in seed bought were less spectacular in these two decades, presumably because, at the beginning of World War II, relatively few farmers were still growing their own seed. Expenses for seeds in 1960 were about 2.5 times the 1940 figure; prices had only a little more than doubled. These purchases (feed, seed, and livestock) from other farmers account for nearly 30 percent of all production expenditures.

More Reliance on Commercial Fertilizer

Farmers in the southeastern States have been heavy users of commercial fertilizers for many years. More recently, farmers in the Corn Belt States and other areas, particularly the irrigated areas, have substantially expanded fertilizer purchases. Nationally, expenditures for fertilizer and lime have risen to about 4.8 times the 1940 outlay. This represents a very sizable increase in quantity, for prices are only about 50 percent higher than they were in 1940.

Another item, about equal in importance to fertilizer outlays, is the property tax bill. Property taxes paid in 1960 were about 3.4 times the 1940 figure. Of the groups of expenditures listed, only interest, repairs on service buildings, and hired labor have increased at a slower rate for this period. One would expect the upward trend in expenditures on property taxes to have been much greater relative to other items, in view of the continually rising demand for government services. But very few expenditures have risen less. However, the increase has been quite rapid for the last five years. Property taxes rose from $1.1 million in 1955 to $1.5 million in 1960, or 35 percent--about 7 percent a year.

Technological developments and changes in price-cost conditions necessitate many adjustments in the combination of farm production inputs used. These adjustments bring about frequent changes in the form and quantity of goods and services the farm supply industries are called upon to furnish. The main purpose of The Farm Cost Situation is to facilitate these changes by providing timely information on relevant technical and economic changes in agriculture.

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